Protecting our Coastal Environment

Accidents do happen. Each year, millions of gallons of oil and other chemicals spill into U.S. waters, often because of accidental releases from marine vessels, pipelines, or other modes of transport. Past mistakes must be redressed. Past industrial and hazardous-materials management practices, uncontrolled waste sites, and increasing pressure for coastal development threaten the long-term health of coastal resources. The nation's coastal ecosystems provide enormous social and economic benefits but are physically and biologically fragile. Ecological impacts from releases of oil and hazardous substances continue to affect large coastal areas and threaten human health:

- about 200 marine accidents collectively spill approximately 2 million gallons of oil each year into the coastal zone;
- over 700 hazardous waste sites contaminate our coasts; and
- sediments contaminated by uncontrolled upstream pollution leach toxic substances into the coastal environment.

These releases can kill fish and birds, destroy habitat, and contaminate critical links in the food chain. They are equally destructive to a national economy heavily dependent upon a healthy coastal environment.

The Solution

NOAA is both a steward and effective advocate for the nation's coastal resources affected by releases of oil and chemicals. For over 20 years, NOAA has worked to protect coastal resources, mitigate threats, reduce harm to coastal resources, and restore their ecological functions when needed. NOAA uses sound science and dynamic partnerships with governmental agencies, states, industry, and the public to combat these problems. This effective approach builds on three principles...

1. Reduce the threat

• by adapting technology to prevent accidents

NOAA uses technology and information management tailored to the marine transportation community. Real-time oceanographic information systems, for example, improve both the safety and efficiency of maritime commerce. By preventing accidents, NOAA reduces threats to coastal resources — an important and cost-effective form of resource protection.

• by developing national guidelines for effective cleanup actions

Twenty years of experience in the field are invaluable. This experience has given NOAA scientists crucial insights into identifying key information. For example, NOAA's Environmental Sensitivity Index atlases prioritize coastal resources for protection from oil spills. NOAA's bioassessment manual and sediment toxicity databases provide guidelines for determining the severity of coastal pollution. These tools provide a common framework — recognized and used by other Federal agencies, states, and industry — for response actions, making rapid decision-making and more effective cleanup possible.

• by conducting field training and research for more efficient responses

NOAA provides frequent training to share knowledge and experience with others in both the U.S. and international response communities. NOAA also develops technical tools, in partnership with other organizations, to support more rapid decision-making. A case in point is NOAA's oil weathering model, used both within the U.S. and internationally to quickly evaluate the effectiveness of response options based upon oil characteristics.

2. Lessen harmful effects

• by finding pragmatic solutions for response and cleanup

NOAA focuses science on site-specific problems, closely coordinating with responding agencies and industry to develop effective, relevant solutions. NOAA forecasts the movement of spilled oil or chemicals within 3 hours of notification, evaluates the risk to resources at spills and waste sites, and recommends cleanup actions. Coupled with years of field experience at spills and waste sites, this scientific approach provides a reality check on what must be done to redress both immediate and long-term environmental threats: assess the environmental risk posed by a specific pollution problem; evaluate and rank the options for protection and mitigation; and recommend cleanup actions that will best protect the environment.

• by evaluating effectiveness of cleanup techniques

NOAA monitors environmental recovery to evaluate response techniques and to develop new, more effective tools for spill and waste site remedies. For example, NOAA's unprecedented program to monitor the recovery of Prince William Sound following the 1989 *Exxon Valdez* oil spill has already led to improvements in spill response and remediation.

3. Restore trust resources

• by accelerating restoration actions

When a spill or chronic release injures coastal resources, NOAA evaluates the injuries, develops a plan to restore natural resources, and negotiates with responsible parties to compensate the public, through restoration for injuries. NOAA may achieve restoration either as part of the cleanup process or through a natural resource damage assessment following cleanup. Early coordination with interested parties can lead to cost-effective and timely restoration. NOAA restorations include rebuilding wetlands, enhancing protected species, and revitalizing fisheries.

In conclusion

Each waste site or spill poses unique challenges and problems. NOAA has a proven approach of applying credible, pragmatic science while building consensus among stakeholders to reach cost-effective solutions. NOAA's successful efforts over the past 20 years have:

- preserved the productivity and diversity of the nation's coastal areas;
- gained clean habitat for fish and wildlife;
- provided cleaner water;
- ensured healthier ecosystems;
- created safer waterways for marine navigation and commerce; and
- reduced economic costs to industry and the public.

For additional information, visit our website at

http://response.restoration.noaa.gov

or call 206/526-6317

May 2002

U.S. Department of Commerce • National Oceanic and Atmospheric Administration • NOAA's National Ocean Service